

What is claimed is:

~~1. An image scanner for use in reading image information, comprising:~~

~~conveying means for conveying a manuscript including said image information to be read on a predetermined reading position of a conveying route;~~

~~a first light source which is located at one side of said conveying route and which emits light onto said predetermined reading position from said one side;~~

~~a second light source which is located at another side of said conveying route with being opposite to said first light source and which emits light onto said predetermined reading position from said another side opposite to said one side;~~

~~image information reading means for reading said image information included in said manuscript at said predetermined reading position on said conveying route by light-electricity conversion; and~~

~~light source switching control means for controlling light source switching between said first and said second light sources to read said image information included in said manuscript, said light source switching control means rendering only said first light source ON when said image information is defined by a transmitting light transmitting through said manuscript, said light source switching control means rendering only said second light source ON when said image information is defined by a reflected light reflected by~~

~~said manuscript.~~

2. An image scanner for use in reading image information, comprising:

a driving side conveying roll for conveying a manuscript including said image information to be read;

5 a driven side conveying roll which is located above said driving side conveying roll and which rotates by rolling-contact with said driving side conveying roll;

a manuscript sensor for detecting said manuscript when a head of said manuscript arrives at a position near the
10 rolling-contact position between said driving side conveying roll and said driven side conveying roll;

conveying roll driving means for starting a rotation of said driving side conveying roll when said manuscript sensor has detected an arrival of said head of said manuscript;

15 light-electricity conversion means for carrying out light-electricity conversion of said image information per one line in a main-scanning direction of said manuscript from a side of one surface of said manuscript at a reading position on a conveying route when said driving side conveying roll is
20 started to rotate by said conveying roll driving means and said manuscript is thereby started to move toward the sub-scanning direction between said driving side and said driven side conveying rolls, said reading position existing downstream of said conveying route from the rolling-contact
25 position by a predetermined distance;

a first light source for emitting light onto said reading

position from a side of another surface of said manuscript opposite to said one surface thereof;

30 a second light source for emitting light onto said reading position from a side of the same surface of said manuscript as said one surface thereof; and

light source switching control means for selectively rendering either said first light source or said second light source ON to read said image information included in said manuscript, dependent on whether said image information is defined by a reflected light reflected by said manuscript or by a transmitting light transmitting through said manuscript.

3. ~~An image scanner as claimed in claim 2, further comprising an upper housing unit in which said driven side conveying roll, said second light source, and said light-electricity conversion means are contained, and a lower housing unit in which said driving side conveying roll and said first light source are contained, said upper housing unit being separated from said lower housing unit, wherein said upper housing unit is capable of reading image information independently.~~

10 4. An image scanner as claimed in claim 3, wherein a lower electric component included in said lower housing unit is controlled by an upper electric component included in said upper housing unit, and wherein said upper and said lower housing units are connected by an attachable and removable connector with each other.

5. ~~An image scanner as claimed in claim 2, further comprising an upper housing unit in which said driven side conveying roll, said second light source, and said light-electricity conversion means are contained, and a plurality of~~
 5 mirrors located between said light-electricity conversion means and said reading position, wherein a light path is turned by each of said a plurality of mirrors therebetween.

6. An image scanner as claimed in claim 2, further comprising an encoder which generates a pulse every time said driven side conveying roll makes a predetermined number of rotations.

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7. An image scanner as claimed in claim 6, wherein said image scanner carries out reading of said image information per one line of said manuscript in synchronization with said pulse generated by said encoder, said reading of said image
 5 information being started from the time when said pulse is generated, said reading of said image information being terminated when a predetermined time has passed after said pulse is stopped.

8. An image scanner for use in reading image information, comprising:

a driving side conveying roll for conveying a manuscript including said image information to be read;

5 a driven side conveying roll which is located above said

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driving side conveying roll and which rotates by rolling-contact with said driving side conveying roll;

a manuscript sensor for detecting said manuscript when a head of said manuscript arrives at a position near the
10 rolling-contact position between said driving side conveying roll and said driven side conveying roll;

conveying roll driving means for starting a rotation of said driving side conveying roll when said manuscript sensor has detected an arrival of said head of said manuscript;

15 light-electricity conversion means for carrying out light-electricity conversion of said image information per one line in a main-scanning direction of said manuscript from a side of one surface of said manuscript at a reading position on a conveying route when said driving side conveying roll is
20 started to rotate by said conveying roll driving means and said manuscript is thereby started to move toward the sub-scanning direction between said driving side and said driven side conveying rolls, said reading position existing downstream of said conveying route from the rolling-contact
25 position by a predetermined distance;

a first light source for emitting light onto said reading position from a side of another surface of said manuscript opposite to said one surface thereof;

a second light source for emitting light onto said reading
30 position from a side of the same surface of said manuscript as said one surface thereof; and

light source selection input means for inputting whether either said first light source or said second light source should

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be selected, dependent on whether said image information is
 35 defined by a reflected light reflected by said manuscript or by
 a transmitting light transmitting through said manuscript,
 and

light source switching control means for selectively
 rendering either said first light source or said second light
 40 source ON to read said image information included in said
 manuscript, responsive to a result of selection by said light
 source selection input means.

9. ~~An image scanner as claimed in claim 8, further~~
 comprising an upper housing unit in which said driven side
 conveying roll, said second light source, and said light-
 electricity conversion means are contained, and a lower
 5 housing unit in which said driving side conveying roll and said
 first light source are contained, said upper housing unit being
 separated from said lower housing unit, wherein said upper
 housing unit is capable of reading image information
 independently.

10. An image scanner as claimed in claim 9, wherein a lower
 electric component included in said lower housing unit is
 controlled by an upper electric component included in said
 upper housing unit, and wherein said upper and said lower
 5 housing units are connected by an attachable and removable
 connector with each other.

11. ~~An image scanner as claimed in claim 8, further~~

~~comprising an upper housing unit in which said driven side~~
 conveying roll, said second light source, and said light-
 electricity conversion means are contained, and a plurality of
 5 mirrors located between said light-electricity conversion
 means and said reading position, wherein a light path is
 turned by each of said a plurality of mirrors therebetween.

12. An image scanner as claimed in claim 8, further
 comprising an encoder which generates a pulse every time said
 driven side conveying roll makes a predetermined number of
 rotations.

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13. An image scanner as claimed in claim 12, wherein said
 image scanner carries out reading of said image information
 per one line of said manuscript in synchronization with said
 pulse generated by said encoder, said reading of said image
 5 information being started from the time when said pulse is
 generated, said reading of said image information being
 terminated when a predetermined time has passed after said
 pulse is stopped.

~~14. An image scanner for use in reading image information,~~
 comprising:

a driving side conveying roll for conveying a manuscript
 including said image information to be read;

5 a driven side conveying roll which is located above said
 driving side conveying roll and which rotates by rolling-
 contact with said driving side conveying roll;

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~~a manuscript sensor for detecting said manuscript when~~
 a head of said manuscript arrives at a position near the
 10 rolling-contact position between said driving side conveying
 roll and said driven side conveying roll;

conveying roll driving means for starting a rotation of
 said driving side conveying roll when said manuscript sensor
 has detected an arrival of said head of said manuscript;

15 light-electricity conversion means for carrying out
 light-electricity conversion of said image information per one
 line in a main-scanning direction of said manuscript from a
 side of one surface of said manuscript at a reading position on
 a conveying route when said driving side conveying roll is
 20 started to rotate by said conveying roll driving means and said
 manuscript is thereby started to move toward the sub-
 scanning direction between said driving side and said driven
 side conveying rolls, said reading position existing
 downstream of said conveying route from the rolling-contact
 25 position by a predetermined distance;

a first light source for emitting light onto said reading
 position from a side of another surface of said manuscript
 opposite to said one surface thereof;

a second light source for emitting light onto said reading
 30 position from a side of the same surface of said manuscript as
 said one surface thereof; and

manuscript type judging means which respectively
 renders said first and said second light sources exclusively ON
 on a condition that said manuscript is existing at said reading
 35 position to compare respective signal levels after conversion

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light source switching control means for selectively rendering either said first light source or said second light source ON to read said image information included in said manuscript, responsive to a result of judgement by said manuscript type judging means.

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16. An image scanner as claimed in claim 15, wherein a lower electric component included in said lower housing unit is controlled by an upper electric component included in said upper housing unit, and wherein said upper and said lower housing units are connected by an attachable and removable connector with each other.

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~~the manuscript until a head of the manuscript reaches said reading position and then starts conveying the manuscript in said sub-scanning direction to read the manuscript.~~

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